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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,019	03/22/2004	James P. Phillips	CS24682RL	1998

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EXAMINER
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NGUYEN, CHAU N

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/806,019

Applicant(s)

PHILLIPS ET AL.

Examiner

Chau N Nguyen

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 18 and 23-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-9, 14-17, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (5,902,957) in view of Gothe (2,018,353).

Takahashi et al. discloses a cable (Fig. 1) comprising a center conductor (2), a conductive sleeve (1) having a first end and a second end and an effective electrical length, surrounding a portion of the center conductor, with the first end physically and electrically coupled to the center conductor. Takahashi et al. does not disclose the conductive sleeve having a length equal to an odd quarter wavelength of a frequency of interest, a dielectric spacer located inside the conductive sleeve for preventing another portion of the center conductor from physically and electrically coupling to the conductive sleeve, nor a dielectric joint coupled to the second end of the conductive sleeve for positioning a portion of the center conductor in a middle of the second end.

Although not specifically disclosed by Takahashi et al., it would have been obvious to one skilled in the art to provide the conductive sleeve of Takahashi et al. with a length equal to an odd quarter wavelength of a frequency of interest to meet the specific use of the resulting cable since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Gothé discloses a cable (Figs 1 and 2) comprising a center conductor, a conductive sleeve, and a plurality of dielectric spacers located inside the

conductive sleeve for preventing the center conductor from physically and electrically coupling to the conductive sleeve. It would have been obvious to one skilled in the art to provide the spacer as taught by Gothe inside the conductive sleeve of Takahashi et al. to improve the insulation between the center conductor and the conductive sleeve. It is noted that since a plurality of spacers are provided inside the conductive sleeve of Takahashi et al., as taught by Gothe, a dielectric joint (or a spacer) is coupled to the second end of the conductive sleeve.

The combination of Takahashi et al. and Gothe also discloses the center conductor being a single wire (re claim 2), the dielectric spacer being spherical dielectric element (re claim 6), the diameter of the spherical dielectric element being shorter than that of the conductive element (re claim 7), the center conductor being located inside the dielectric spacer along the diameter of the spacer (re claim 8), the dielectric spacer comprising multiple spherical dielectric elements (re claim 9), the dielectric joint comprising a spherical dielectric element (re claim 14), the diameter of the spherical dielectric element being approximately equal to the diameter of the conductive sleeve (re claim 15), the center conductor being located inside the dielectric joint along a diameter of the joint (re claim 16), the first end comprising a conductive bushing (3) (re claim 17), the conductive sleeve being cylindrical in shape (re claim 19). Re claim 3, it would have been obvious to one

skilled in the art to use multiple wires for the center conductor of Takahashi et al. since center conductor comprising multiple wires is known for being used in the cable art because of its flexibility. Re claims 4, 5, 20 and 21, it would have been obvious to one skilled in the art that depending on the specific use of the resulting cable, to choose a suitable material for the dielectric spacer of Takahashi et al., either rigid or compressible since it has been held that within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

4. Claims 1 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Sakuragi et al. (4,396,797).

Takahashi et al. discloses a cable (Fig. 1) comprising a center conductor (2), a conductive sleeve (1) having a first end and a second end and an effective electrical length, surrounding a portion of the center conductor, with the first end electrically coupled to the center conductor. Takahashi et al. does not disclose the conductive sleeve having a length equal to an odd quarter wavelength of a frequency of interest, a dielectric spacer located inside the conductive sleeve, nor a dielectric joint coupled to the second end of the conductive sleeve for positioning a portion of the center conductor in a middle of the second end (re claim 1).

Although not specifically disclosed by Takahashi et al., it would have been obvious to one skilled in the art to provide the conductive sleeve of Takahashi et al. with a length equal to an odd quarter wavelength of a frequency of interest to meet the specific use of the resulting cable since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Sakuragi et al. discloses a flexible cable comprising dielectric spacers (9, Fig. 6), each comprising a tubular solid dielectric element with an outer and an inner diameter (re claim 10), the tubular solid dielectric element being approximately the diameter of an outer sleeve (10) and the inner diameter of the tubular solid dielectric element being larger than a diameter of a center conductor (Fig. 3) (re claim 12), the dielectric spacer comprising a tubular air dielectric element inside the tubular solid dielectric element (re claim 13). It would have been obvious to one skilled in the art to use a plurality of dielectric elements (9) taught by Sakuragi et al. inside the conductive sleeve of Takahashi et al. to improve the insulation between the center conductor and the conductive sleeve. It is noted that since a plurality of spacers are provided inside the conductive sleeve of Takahashi et al., a dielectric joint (or a spacer) is coupled to the second end of

the conductive sleeve, and the center conductor is located inside the spacer along a longitudinal axis of the tubular solid dielectric element (re claim 11).

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (4,029,891).

Nakata discloses a cable comprising a first rigid segment (11) having an effective electrical length, a flexible joint (13) coupled to one end of the first rigid segment, a second rigid segment (12) having an effective electrical length coupled to the joint, and a linear conductor (10) located within the first rigid segment, the flexible joint, and the second rigid segment. Nakata does not disclose the first and second rigid segments, each having a length equal to an odd quarter wavelength of a frequency of interest. However, it would have been obvious to one skilled in the art to provide each rigid segment of Nakata with a length equal to an odd quarter wavelength of a frequency of interest to meet the specific use of the resulting cable since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.



***Allowable Subject Matter***

6. Claims 18 and 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

7. Applicant's arguments with respect to claim 22 have been considered but are moot in view of the new ground(s) of rejection except for the following.

In response to applicant's argument that it would not be obvious to one of ordinary skill in the art to combine the rigid construction of Takahashi with the flexible construction of Gothe and the flexible construction of Sakugari, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Furthermore, although Takahashi discloses a straight wire with a straight pipe, nowhere in Takahashi does disclose the construction being a rigid

construction. Applicant, on one hand, argues that the construction of Gothe is a flexible construction. On the other hand, applicant states that the insulation spacers (beads) listed in Gothe are all rigid dielectric materials, see page 3 of the remarks, last paragraph. Applicant further argues that the combination of Takahashi and Gothe fails to show "a dielectric joint coupled to the second end of the conductive sleeve". As stated in the rejection, the spacers are provided along the length of the center conductor inside the conductive sleeve, as taught by Gothe, accordingly there is a dielectric joint (or spacer) coupled to the second end of the conductive sleeve.

### *Summary*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened

statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### *Communication*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N Nguyen whose telephone number is 571-272-1980. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chau N Nguyen  
Primary Examiner  
Art Unit 2831